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Real-time rendering framework in the virtual home design system.

Pan, Zhigeng (ed.) et al., Transactions on Edutainment IX. Berlin: Springer (ISBN 978-3-642-37041-0/pbk). Lecture Notes in Computer Science 7544. Journal Subline, 213-224 (2013).

Summary: This paper introduces a home design system with its great functions and framework design, including the scene management based on the cell & portal system, improved variance shadow mapping and the recently popular real-time rendering framework called deferred lighting. In the implementation details, we put in some useful improvements, such as compressing the geometry buffer and lighting buffer to decrease the video memory and bandwidth occupation with which the multi-render-target limitation has been dislodged, using the light volume stencil culling which is similar to the shadow volume algorithm to identify the lit pixels and modifying the physically correct shading model based on Fresnel term to adapt to the deferred lighting framework.

Classification: R80 P50 R40

Keywords: scene management; soft shadow; deferred lighting; light volume

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